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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,351	12/04/2003	Knut Ivar Ekeberg	979-045	8239

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EXAMINER

MAYO III, WILLIAM H

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/729,351

Applicant(s)

EKEBERG ET AL.

Examiner

William H. Mayo III

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copies have been filed in present Application No. 10/729,351, filed on December 4, 2003.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4. The abstract of the disclosure is objected to because it contains the term "comprises", which is improper language for the abstract. The applicant should replace the term with the term --has--. Also the abstract has multiple paragraphs which is also improper content for the abstract. The applicant should rewrite the abstract to contain a single paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6-7, 9, 11-16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wooters (Pat Num 6,239,363). Wooters discloses a flexible electrical elongated device (Figs 1-16) having an longitudinal axis and being suitable for service in high mechanical load environments (Col 1, lines 9-11). Specifically, with respect to claim 1, Wooters disclose a device (22) comprising at least one elongated electrical

Art Unit: 2831

conductor (66), an elongated load bearing component (50) along the longitudinal axis and having an external surface that includes at least one groove (54a-h) disposed along the longitudinal axis (Fig 4), wherein the groove (54a-h) is designed for holding the conductor element (66) within the groove (54a-h) wherein the conductor element (66) can move substantially radially when the device (22) is bent (Col 5, lines 54-62). With respect to claim 2, Wooters discloses that an internal element (72) extends along an longitudinal axis and made of axial stiffness material (i.e. synthetic fiber) and a polymeric layer (50) is bonded around the internal element (72), wherein the polymeric layer (50) has an external surface (Fig 4). With respect to claim 4, Wooters discloses that the internal element (72) may be made of fiber (Col 5, lines 63-67). With respect to claim 6, Wooters discloses that the polymeric layer (50) is so elastic that the conductor element (66) is snug fit in the groove (54a-h) wherein the conductor element (66) can move substantially radially when the device (22) is deformed (Col 5, lines 54-62). With respect to claim 7, Wooters discloses that the device (22) is straight, wherein the cross section of the groove in a perpendicular plane to the longitudinal axis is oval like (Fig 4) and the conductor element (72) fits with elasticity within the at least one groove (54a-h). With respect to claim 9, Wooters disclose that the groove (54a-h) may be a helically shaped groove (Fig 5, Col 8, lines 20-27). With respect to claim 11, Wooters discloses that the plurality of parallel grooves (i.e. linear) may have only one conductor element (i.e. utility line (60, 62, 66, 68, & 70)). With respect to claim 12, Wooters discloses that the groove (54a-h) may be tight enough to hold the conductor element (66) substantially continuously along the longitudinal axis (Fig 5). With respect to claim 13, Wooters

Art Unit: 2831

discloses that the device (22) is a power submarine cable (Col 1, lines 9-11, i.e. seismic cable) comprising an outer protective jacket (44) surrounding the load bearing component (50) and allowing penetration of seawater (80) in a groove (52a-h, Fig 4). With respect to claim 14, Wooters discloses that the predefined intervals along the groove (54a-h) have a maximum width between the sidewalls greater than the radial dimension of the conductor element (66, Fig 4). With respect to claim 15, Wooters discloses that an umbilical cable (Fig 4) comprises a signal cable (22) comprising at least one elongated electrical conductor (66), an elongated load bearing component (50) along the longitudinal axis and having an external surface that includes at least one groove (54a-h) disposed along the longitudinal axis (Fig 4), wherein the groove (54a-h) is designed for holding the conductor element (66) within the groove (54a-h) wherein the conductor element (66) can move substantially radially when the device (22) is bent (Col 5, lines 54-62). With respect to claim 16, Wooters discloses that the flexible electrical elongated device (78) is disposed in the core of the cable (Fig 4). With respect to claim 18, Wooters discloses that the internal element (78) is a central element (Fig 4).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 10 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wooters (Pat Num 6,239,363). Wooters discloses a flexible electrical elongated device (Figs 1-16) having an longitudinal axis and being suitable for service in high mechanical load environments (Col 1, lines 9-11) as disclosed above with reference to claim 1. Specifically, with respect to claims 10 & 20, Wooters discloses that the grooves (54a-h) may be helically wrapped around the load-bearing component (50, Fig 5, Col 8, lines 20-28).

However, Wooters doesn't necessarily disclose the helical angle being between 5-85 degrees (claim 10), nor the helical angle being 50-80 degrees (claim 20).

With respect to claims 10 & 20, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Wooters to comprise the helically angle being 5-85, more specifically, 5-85 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the

art. *In re Aller*, 105 USPQ 233 and it appears that Wooters would perform equally well with the modification.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wooters (Pat Num 6,239,363) in view of Quinn et al (Pat Num 6,748,147, herein referred to as Quinn). Wooters discloses a flexible electrical elongated device (Figs 1-16) having an longitudinal axis and being suitable for service in high mechanical load environments (Col 1, lines 9-11) as disclosed above with reference to claim 1. Specifically, with respect to claim 8, Wooters discloses that the device (22) is straight, wherein the cross section of the groove in a perpendicular plane to the longitudinal axis is oval like (Fig 4) and the conductor element (72) fits with elasticity within the at least one groove (54a-h) in a perpendicular plane to the longitudinal axis is defined by two sidewalls (Fig 4).

However, Wooters doesn't necessarily the two sidewalls being parallel to each other and round shape bottom wall wherein a soft filler material is inserted between the conductor element and the bottom wall (claim 8).

Quinn teaches a cable (Figs 1-2) comprising a device that provides corrosion resistance protection and water blocking compounds to protect the conductors of the cable (Col 4, lines 15-43). Specifically, with respect to claim 8, Quinn teaches a cable (10) comprising an internal support member (72 as shown in Fig 7) having a plurality of grooves (73), wherein the grooves (73) may have sidewalls parallel to each other and comprising a round shape bottom (Fig 7), wherein a conductor (71) is inserted in the groove (73) and a soft filler material (99) is inserted between the conductor element (11) and the bottom wall (74).

With respect to claim 8, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the device of Wooters to comprise the groove and filler configuration as taught by Quinn because Quinn teaches that such a configuration provides corrosion resistance protection and water blocking compounds to protect the conductors of the cable (Col 4, lines 15-43) and since it has been held that a change in form cannot sustain patentability where involved is only extended application of obvious attributes from a prior art. *In re Span-Deck Inc. vs. Fab-Con Inc.* (CA 8, 1982) 215 USPQ 835 .

11. Claims 5, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wooters (Pat Num 6,239,363) in view of Glew et al (Pat Num 6,639,152, herein referred to as Glew). Wooters discloses a flexible electrical elongated device (Figs 1-16) having an longitudinal axis and being suitable for service in high mechanical load environments (Col 1, lines 9-11) as disclosed above with reference to claim 1.

However, Wooters doesn't specifically disclose the polymeric layer being a cross-linked PE or thermoplastic polymer (claim 5), nor the flexible electrical device being disposed in a first layer including signal cable elements around a core and in a second layer around the first layer (claim 17), nor the polymeric layer being extruded (claim 19).

Glew teaches a device (Figs 9B) having lower cost, improved electrical, flammability, and tensile strength properties (Col 5, lines 10-30). Specifically, with respect to claims 5 & 19, Glew discloses a device (7) comprising a flexible signal cable elements (700-705), wherein the elements (700-705) are made of a thermoplastic

Art Unit: 2831

polymer (Col 14, lines 29-33), that may be extruded (Col 5, lines 52-53). With respect to claim 17, Glew discloses a device (7) comprising a flexible signal cable elements (700-705) comprising grooves on the outer surface wherein conductor elements are disposed in a first layer and wherein the elements (700-705) are inserted in the grooves of a load bearing element (Fig 7) having bigger grooves (750) on a second layer, wherein the elements (700-705) are surrounded by the lead bearing element (Fig 7).

With respect to claims 5, 17, & 19, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the device of Wooters to comprise the device configuration as taught by Glew because Glew teaches that such a configuration provides a device (Figs 9B) having lower cost, improved electrical, flammability, and tensile strength properties (Col 5, lines 10-30).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Ellhardt (Pat Num 3,603,715), Zeidler (Pat Num 5,177,809), Rogillot (Pat Num 1,008,370), Arnould (Pat Num 6,288,340), Gareis et al (Pat Num 6,222,130), all of which discloses insulating core materials having grooves.

Communication

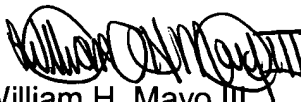
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (571)-

Art Unit: 2831

272-1978. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William H. Mayo III
Primary Examiner
Art Unit 2831

WHM III
September 30, 2004